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## Prevalence of Depression and Anxiety among Mothers of Hospitalized Children in Kurdistan Region-Iraq: A Cross-Sectional Study

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### Abstract

**Background:** The hospital admission of a child can be a distressing event for parents, particularly for mothers. This stress subsequently impacts the child's course of treatment. This study sets out to evaluate the degree of anxiety and sadness among mothers whose children were hospitalized in Duhok City.

**Methods:** The research was done using a descriptive cross-sectional study design. A non-probability convenience sample of 100 mothers whose children were hospitalized at the medical ward at Heevi Pediatric Teaching Hospital was used. Data was collected using the Patient Health Questionnaire-9 and Generalized Anxiety Disorder-7 scales from January 5th to March 15th, 2024.

**Results:** The study found that the mean age of the mothers was 29.38 and married for less than 5 years, 34% were illiterate, 85% were housewives, the mean of 3.03 had more than three children, and half of them lived in urban areas. Regarding the children's data, the mean age of children was 1.85; most of them were male, hospitalized for <5 days, and the majority were hospitalized for the 1st time. Responses from the mothers on anxiety and depression scales revealed that (43%) had mild depression. Also, many mothers (35%) had mild anxiety.

**Conclusions:** The current study found the significant presence of symptoms of anxiety and depression; to assist these mothers and address their psychological disorders, the study brought attention to the necessity of integrating mental health services within hospitals.

### What is already known about the topic?

**Mothers are particularly vulnerable to depression and anxiety:** Studies have consistently shown that mothers, as primary caregivers, are more likely than fathers or other family members to develop depressive and anxiety symptoms during a child's hospitalization.

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## Introduction

Parents who have children admitted to the hospital, particularly mothers, may experience psychological effects like despair and anxiety. In addition to having an impact on the child, hospitalizations can create unbalanced situations that can lead to stress and anxiety in mothers or other primary caregivers(Andrade et al., 2017). Stress brought on by hospitalized children's admission and being separated from their mothers may be harmful to mothers' mental health and wellbeing; it has been associated with symptoms of anxiety, exhaustion, depression, and disturbed sleep (Busse et al., 2013).

The family is the fundamental unit of society, and the growth and well-being of its members depend on the family's ability to remain together. Having a child in the hospital causes trauma to the parents, particularly the mother, and has a detrimental effect on the family unit as well as the parents' ability to control their emotions (Edéll-Gustafsson et al., 2015).

Research on the requirements of mother's show that some of them lack the capacity or want to communicate their demands because they feel inadequate and powerless in the hospital (Seyedamini, 2011). Despite paying attention to the instances, the nurses might see the mother's requirements differently. Consequently, the moms' needs are not effectively satisfied. (Foster et al., 2018). Parental concern may arise from the nurse's inability to meet these needs or from her incorrect response to them (Çalbayram et al., 2016).

In determining the reasons behind a mother's concern and alleviating it by attending to the needs of children and their families, nurses can be quite helpful (Jones et al., 2017). Therefore, as an essential member of the healthcare team, the nurse must comprehend the demands of the moms (Aarthun et al., 2018).

As a pediatric nursing philosophy, family-centered care (FCC) emphasizes the provision of responsive care. As the main source of child support, it satisfies both the needs and priorities of the parents and the child (Dall'oglio et al., 2018). Keeping the family's reputation intact and managing day-to-day affairs while caring for the hospitalized child may cause a number of needs for the parents(Jones et al., 2017).

Assessing the degree of anxiety and depression experienced by those mothers is crucial for determining the extent of the issue and formulating suggestions to mitigate its detrimental psychological effects. The objective of this study is to explore the level of anxiety and depression

and their correlation with sociodemographic characteristics among mothers of hospitalized children in a sample population in the Kurdistan Region.

## **Materials and methods**

### **Study design and setting**

The research utilized a descriptive cross-sectional study design to meet its objectives at Hivie Pediatric Teaching Hospital in the Duhok City of the Kurdistan Region of Iraq, from 5th of January, to the 15th of March 2024.

### **Sample size and sampling**

A non-probability consecutive sampling method was used to enroll the participant, which involved (100) mothers that their children were admitted to medical ward at Hive's pediatric teaching Hospital. The participants were selected based on the following criteria, Inclusion Criteria: Mothers who admit at the hospital with children for more than 72 hours, mother between age 18-45 years old and mothers who were willing to take part in the study. Exclusion Criteria: Mothers who were unwilling to take part in the study and mothers who have previous mental disorders.

### **Measurement**

The researchers used a series of psychological instruments along with a specially created questionnaire. consisting of three main parts: the sociodemographic characteristics of mothers, child socio-demographic characteristics, Patient Health Questionnaire (PHQ-9) Scale, and 7-item Generalized Anxiety Disorder (GAD-7) scale, all instruments were translated to the Arabic language.

Mother's socio-demographic information, questions from participants included age, number of years married, and degree of education, occupation, marital status, residence, and number of children. Children's information includes age, gender, number of hospital days, and frequency of hospital stays.

The Patient Health Questionnaire assesses mothers' depression level (Kroenke et al., 2002). The mother had to choose one of the four options for each question on the nine-item scale (not at all, several days, more than half the days, or practically every day). Its overall rating may be

between 0 and 27. The mild, moderate, moderately severe, and severe depressions are represented by the cutoff thresholds of 5, 10, 15, and 20, respectively.

The Generalized Anxiety Disorder scale is used to evaluate mothers' anxiety levels (Spitzer et al., 2006). The subject was asked seven questions about their level of anxiety over the last two weeks (not at all/several days/over half a day/nearly every day) using a 4-point Likert scale. The total sum score of the GAD-7 can range from 0 to 21. These levels, with total scores of 0-4, 5-9, 10-14, and 15-21, respectively, imply no anxiety, mild anxiety, moderate anxiety, and severe.

### **Data collection and data analysis**

The study's data-gathering period was roughly two months. Samples were collected for four hours each day, three working days a week, with the only focus being the outpatient population of Hivie Pediatric Teaching Hospital. The study employed a standardized questionnaire to collect data from the participants during a 15–20 minute period through direct, customized interviews. Using a statistical tool for Social Science version 25 (SPSS), the data were examined to respond to the study questions. All of the questions, including those on frequency, percentage, mean, and standard deviation, were addressed using descriptive statistics. & Inferential was applied to address the questions of the association between mothers' demographic characteristics regarding anxiety and depression, a t-test is applied to determine Pearson correlation.

### **Results**

The study was based on the responses of 100 participants who completed an interview questionnaire.

The study showed the socio-demographic data of mothers. the majority of mothers (50%) their age was between (20-29) years old. Regarding the years of marriage, the results showed that the highest percentage (40%) of the samples were married for (<5) years. The maximum level of the samples (34%) was illiterate. Regarding occupation, the maximum level of the samples (85%) were housewives. The majority of the samples (57%) live in the urban area. Regarding the number of children, the highest percentage (52%) of mothers have more than 3 children (Table 1).

Table that provides information on the socio-demographic data of children. the majority of hospitalized children (62%) their ages were (<1) year. with (69%) being males, and (31%) being female, and (67%) of children have been hospitalized for (<5) days. The majority of children (54%) were hospitalized for the first time (Table 2).

The study showed that all the mothers have symptoms of depression with variations in the severity of these symptoms. The results reflected that (43%) of mothers had mild depression, and (26%) had moderate depression, while (14%) of mothers had moderately severe depression, (13%) had minimal depression, and (4%) had severe depression. Also, the results showed that (35%) had mild anxiety and (28%) of mothers had moderate anxiety, while (25%) of mothers had minimal anxiety and (12%) had severe anxiety (Table 3).

The study showed that the level of anxiety was controlled by the day of the hospitalization of the children among mothers ( $P=0.02$ ). The longer hospitalization duration was a factor for the higher level of anxiety among mothers. However, depression among mothers was controlled by the age of the children ( $P=0.04$ ). The higher depression level of mothers was correlated with having younger admitted children (Table 4a, b)

**Table 1: Distribution of Socio-Demographic Data of Mothers**

<b>Variables</b>		<b>No.</b>	<b>%</b>	<b>Mean (SD)</b>
<b>Age of Mothers</b>	<20 Years	4	4	29.38 (6.281)
	20-29 Years	50	50	
	30-39 Years	38	38	
	>40 Years	8	8	
<b>Years of Marriage</b>	<5Year	40	40	8.27 (5.936)
	5-10 Years	30	30	
	11-15Years	17	17	
	>15 Years	13	13	
<b>Level of Education</b>	Illiterate	34	34	
	Primary school	26	26	
	Secondary school	14	14	
	High school	11	11	
	Institute	5	5	
	College and more	10	10	
<b>Working Status</b>	student	3	3	
	Unemployed	12	12	
	House Wife	85	85	
<b>Residence</b>	Rural	33	33	
	Urban	57	57	
	Suburban	10	10	
<b>Number of Children</b>	1 Child	25	25	3.03 (1.899)
	2 Children	23	23	
	3 Children and more	52	52	

**Table 2: Distribution of Socio-Demographic Data of Hospitalized Children**

<b>Variables</b>		<b>No.</b>	<b>%</b>	<b>Mean (SD)</b>
<b>Age of Child</b>	<1 Years	62	62	1.85 (2.387)
	1-4 Years	24	24	
	5-8 Years	11	11	
	9-12 Years	3	3	
<b>Gender of Child</b>	Boy	69	69	
	Girl	31	31	
<b>Days of Hospitalization</b>	3-6 Days	67	67	7.28 (7.512)
	7-10 Days	18	18	
	11 Days and more	15	15	
<b>Frequency of Hospitalization</b>	1st Time	54	54	2.42 (2.941)
	2nd Time	22	22	
	3rd Time and more	24	24	

**Table 3: Distribution of Mothers by their Depression and Anxiety Factors**

Variables	Scores	No.	%
<b>Depression symptoms</b>			
Minimal depression	0-4	13	13
Mild depression	5-9	43	43
Moderate depression	10-14	26	26
Moderately severe depression	15-19	14	14
Severe depression	20-27	4	4
<b>Anxiety symptoms</b>			
Minimal anxiety	0-4	25	25
Mild anxiety	5-9	35	35
Moderate anxiety	10-14	28	28
Severe anxiety	15-21	12	12

**Table 4a: Predictors of Depression and Anxiety among Mothers of Hospitalized Children**

Outcome: GAD			Outcome: Depression		
Controlling factors	Presentations	P	Controlling factors	Presentations	P
Days of Hospital		0.02	Age of child		0.04
No. of children		0.07	Residency		0.22
Years of marriage		0.38	Freq. of Hospital		0.35
Age of mother		0.39	Age of mother		0.42
Age of child		0.41	Occupation		0.45
Gender of child		0.69	Gender of child		0.62
Education		0.88	Education		0.65
Occupation		0.91	Years of marriage		0.74
Freq. of Hospital		0.94	Days of Hospital		0.85
Residency		0.97	No. of children		0.99

Standard least square with effect leverage was performed for statistical analyses.

**Table 4b: Correlation of GAD and Depression with Days of Hospital and Age of Children, Respectively in Mothers**

GAD				
	Value	Lower 95%	Upper 95%	P
Days of Hospital	0.25	0.0	0.43	0.0119
Depression				
	Value	Lower 95%	Upper 95%	P
Age of child	-0.24	-0.42	-0.05	0.0149

Bivariate correlation was performed for statistical analyses.

## Discussion

The purpose of this study, which took place in the pediatric ward of the Hevi Pediatric Teaching Hospital in Duhok, was to explore the prevalence of anxiety and depression in mothers of hospitalized children. Numerous studies have established that parents' anxiety during their child's hospitalization is an essential aspect of this experience (Gurtovenko *et al.*, 2021; Toledano-Toledano *et al.*, 2020). Most of them concentrate on the pressure that parents of children who are chronically ill or very gravely ill go through, but there is an increasing amount of emphasis on the necessity for a more thorough examination of stress in short-term hospitalizations as well (Commodari, 2010). The data about the mother's occupation indicates that most of the moms were housewives. This information may be useful in determining patterns about the occupation of mothers and their use of healthcare, as well as in comprehending the demographic makeup of the patient population. The majority of patients (75%) were hospitalized for 1 day, this suggests that the majority of cases may have been for minor medical issues or routine procedures, as indicated by the short hospital stays. Frequency of Hospital admission: The data shows that the majority of patients (54%) were admitted for the first time. This distribution could provide insights into the recurrence of medical conditions or the need for ongoing treatment for a subset of patients. According to the study's findings, moms of hospitalized children who experience depression or anxiety may have serious consequences for their health as well as for the children's general treatment and recovery.

The data on the prevalence of anxiety and depression among hospitalized moms offer important new perspectives on the state of mental health. There is a range of severity levels in the distribution of depressive symptoms among hospitalized mothers. A considerable proportion of women may be in emotional distress. They could benefit from specialized assistance or interventions to address their mental health, as the majority of them displayed mild to moderate signs of depression. Furthermore, the fact that 18% of moms reported having moderately to severely severe depressive symptoms emphasizes the significance of mental health screening and providing access to mental health resources in hospital settings. According to a study Salah *et al.* (2018), a significant number of new mothers exhibit signs of depression and anxiety. This suggests that having a child sent to the hospital might have a psychological toll on mothers. Extreme stress and



anxiety are common among parents, with mothers in particular feeling responsible, guilty, inadequate, and ashamed of their baby's hospital stay. Jubinville et al. (2012) also shown that mothers of young children have a wide range of emotional states, including notable indications of depression and anxiety.

Linley et al. (2008) shown that during hospital stays, around 50% of mothers have heightened levels of anxiety symptoms. Miles et al. (2007) discovered even greater levels of depression symptoms, reporting that 63.0% of mothers experienced heightened depression symptoms at the time of their child's hospitalization.

The current study's results indicated no significant relationships between the mothers' personal information and their levels of anxiety or depression, except for the days of hospitalization and the child's age. According to Tayebbeh and Mohammad's study, anxiety that other children might have the same issue as you did was the most effective stressor associated with socioeconomic characteristics, whereas being far from home and the office was the least effective (Tehrani *et al.*, 2012). Deprivation of emotional and physical needs is frequently followed by increasing exhaustion. The more hospital stays there are and the longer they stay, the more anxiety that mother get, and mothers may feel pressure to meet societal expectations of parenting as their children get older, leading to feelings of guilt or inadequacy if they feel they are not measuring up. One of the study's weaknesses was its small sample size, and another was that some mothers did not arrive with their infants at hospital.

## **Conclusions**

The current study found the significant presence of symptoms related to anxiety and depression, which may be seen in their behavior and capacity to fulfill the role of the mother. In conclusion, the researcher thought that psychological disruptions caused by mothers' anxiety and depressive symptoms as a result of their children's illness and hospitalization may have an impact on their mental health. During this time, mothers require psychosocial support to maintain their emotional equilibrium and reduce distressing feelings that may hurt their health.

**Ethical Considerations**

The University of Duhok Scientific Committee of Nursing College accepted this study. Finally, approval has been acquired from the Director of Health's Research Ethical Committee in the Duhok Governorate, as reference number (31012024-1-20). Each participant in the current study gave their verbal and written agreement. The research goal was explained to the participants, and they were assured of the privacy and confidentiality of the data.

**DECLARATION SECTION****Availability of data and material**

Data is available at the request of the corresponding author.

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